

DaimlerChrysler AG

Patent claims

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1. A vehicle with a lighting device (7) which has a housing part (9) and a transparent front lens (11) arranged thereon, the housing part (9) being connected in a positionally fixed manner to the vehicle body, and
10 a spring means being provided in the connecting region of the lens (11) to the housing part (9), with the spring means, when there is an impact effect in the direction of the longitudinal axis of the vehicle, permitting the lens (11) to be displaced in the
15 direction of the housing part (9) from a fitted position into a withdrawal position offset back in relation to the outer skin of the vehicle, characterized in that the lens (11) is additionally mounted pivotably about an axis (55) running in the
20 vertical direction to an imaginary horizontal.

2. The vehicle as claimed in claim 1, characterized in that the mounting of the lens (11) is designed in such a manner that, depending on the point of
25 application, direction of action and size of an impact acting on the lens (11), the lens (11) executes only a pivoting movement, only a translatory movement or a combination of both types of movement.

30 3. The vehicle as claimed in claim 1 or 2, characterized in that the pivot bearing (53) of the lens (11) is provided on that side edge of the lens (11) which is situated closer to the center of the vehicle.

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4. The vehicle as claimed in one of the preceding claims, characterized in that the pivot bearing (53) is formed by at least one pivot pin (57) which is provided on the lens (11) and is supported on a guide rail (59).

5. The vehicle as claimed in one of the preceding claims, characterized in that the guide rail (59) is aligned with respect to the longitudinal center axis of the vehicle in such a manner that, when there is an impact effect on the lens (11) within a certain angular range, the lens (11) is displaced along the guide rail (59) in the direction of the housing part (9).

6. The vehicle as claimed in one of the preceding claims, characterized in that the resiliently flexible mounting of the lens (11) on the housing part (9) by means of the spring means is designed as a multi-point mounting.

7. The vehicle as claimed in claim 6, characterized in that at least one of the fastening points (13A, 13B, 13C, 13D) comprises a spring element (45) which, at its one end on the body side, is arranged in an essentially positionally fixed manner and, at its distal end, the connecting region to the lens (11) is provided.

8. The vehicle as claimed in claim 7, characterized in that the spring element (45) is designed as a coil.

9. The vehicle as claimed in claim 8, characterized in that the coil tapers in the direction of its end facing away from the lens (11).

10. The vehicle as claimed in claim 8 or 9, characterized in that the height of the coil decreases in the direction of its end facing away from the lens (11).

11. The vehicle as claimed in one of claims 8 to 10, characterized in that the coil has an essentially rectangular cross section.

12. The vehicle as claimed in one of the preceding claims, characterized by means for adjusting the lens (11) with respect to the outer skin of the vehicle.

5 13. The vehicle as claimed in claim 12, characterized in that the adjusting means additionally serve to couple lens (11) and housing part (9).

10 14. The vehicle as claimed in one of the preceding claims, characterized in that the adjusting means are arranged on the fastening points (13A, 13B, 13C, 13D) of the lens (11) or are integrated in the fastening points (13A, 13B, 13C, 13D).

15 15. The vehicle as claimed in one of the preceding claims, characterized in that at preferably each of the fastening points (13A, 13B, 13C, 13D) a respective coupling membrane (31) is provided, the coupling membrane reaching through the spring element (45) and
20 at its one a pivotably mounted element (37) is provided and its distal end reaches through a passage opening (41) in the lens (11) with play.

25 16. The vehicle as claimed in claim 15, characterized in that the end reaching through the passage opening (41) is provided with an external thread onto which a head element (43) provided with an internal thread can be screwed from the front side of the lens (11).

30 17. The vehicle as claimed in one of the preceding claims, characterized in that the fastening points (13A, 13B, 13C, 13D) for the lens (11) are provided on the housing part (9).

35 18. The vehicle as claimed in one of the preceding claims, characterized in that the housing part (9), the lens (11) and the spring means form a preassembleable construction unit.

19. The vehicle as claimed in one of the preceding claims, characterized in that at least one fastening point (13A, 13B, 13C, 13D) for fastening the lens (11) to the housing part (9) is provided in each case on the
5 upper and on the lower edge region of the lens (11).

20. The vehicle as claimed in one of the preceding claims, characterized in that the pivot bearing (53), the fastening points (13A to 13D) and the guide rail
10 (51) are formed integrally on the housing part.

21. A vehicle lighting device (7) with the features as claimed in one of claims 1 to 20.